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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,099	09/03/2003	Yoshiaki Tanaka	10844-31US (203055 (C-1))	4884
570 7590 03/08/2007 AKIN GUMP STRAUSS HAUER & FELD L.L.P. ONE COMMERCE SQUARE 2005 MARKET STREET, SUITE 2200 PHILADELPHIA, PA 19103			EXAMINER ROE, JESSEE RANDALL	
			ART UNIT	PAPER NUMBER
			1742	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/654,099

Applicant(s)

TANAKA, YOSHIAKI

Examiner

Jessee Roe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-18 and 23-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims Status

Claims 3-58 is/are pending. Claims 19-22 and 39-58 are withdrawn from consideration.

Terminal Disclaimer

The terminal disclaimer filed on 16 January 2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent application that is issued corresponding with Application No. 10/656561 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP 13-266724).

Claims 3-10 are rejected on the same grounds as stated in the Office Action of 27 September 2006.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (JP 13-266724) as applied to claims 3-10, and further in view of Ishioka (JP 403110732A).

Claims 11-18 are rejected on the same grounds as stated in the Office Action of 27 September 2006.

Claims 23-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka or Tanaka in view of Ishioka as applied to claims 3-18, and further in view of Cole (GB 2028608 A).

Claims 23-38 are rejected on the same grounds as stated in the Office Action of 27 September 2006.

Response to Arguments

Applicant's arguments filed 21 December 2006 have been fully considered but they are not persuasive.

First, the Applicant argues that the compositions of the thermal alloy fuse of the current invention do not overlap that of Tanaka (JP 13-266724), and therefore the thermal alloy fuse is patentably distinct. The Examiner agrees partially. The presently claimed alloy has greater than 46 to 70 weight percent Sn, 18 to less than 48 weight percent In, and 1 to less than 12 weight percent Bi. The thermal alloy fuse of Tanaka (JP 13-266724) has 40 to 46 weight percent Sn, 42 to 53 weight percent In, and 7 to 12 weight percent Bi. The claimed thermal alloy fuse compositions of In and Bi do overlap that of Tanaka (JP 13-266724). The claimed thermal alloy fuse composition of Sn does not overlap, but is so close that it is not patentably distinct. See MPEP 2144.05 I. Similarly, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have

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expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). 46.1 weight percent Sn would not be patentably distinct from 46 weight percent Sn as disclosed by Tanaka (JP 13-266724).

Second, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tanaka (JP 13-266724) teaches (Fig. 3, 0018) that lead conductors are bonded to ends of the fuse element, respectively, a flux is applied to said fuse element, said flux-applied fused element is passed through a ceramic tube (i.e. cylindrical case), and gaps between ends of the ceramic tubing and the lead conductors are sealingly closed. Tanaka (JP 13-266724) does not specify the ends of the lead conductors have a disk-like shape, and ends of the fuse element are bonded to front faces of the disks. Ishioka (JP 403110732A) teaches (abstract) providing lead conductors with a disk-like shape at the ends of the lead conductors and bonding the fuse elements to the front faces of the

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disks in order to prevent flux from adhering to the ends of the cylindrical case and to achieve quick separation when the fuse is activated. It would have been obvious to one of ordinary skill in the art to modify the method of Tanaka (JP 13-266724) by providing lead conductors with a disk-like shape at the ends of the lead conductors and bonding the fuse elements to the front faces of the disks in order to prevent flux from, as stated in the Office Action of 27 September 2006. The aforementioned mentioned references do not specify providing a heating element for fusing off said fuse element. However, Cole (GB 2028608A) teaches (abstract) providing a resistor to blow a thermal fuse in order to terminate heating in a heating circuit for an electric blanket. It would have been obvious to one of ordinary skill in the art to modify the aforementioned reference by providing a resistor to blow a thermal fuse in order to terminate heating in a heating circuit for an electric blanket as taught by Cole (GB 2028608A) as stated in the Office Action of 27 September 2006.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued

examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JR

ROY KING
SUPERVISORY PATENT EXAMINER
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